III. REMARKS

Claims 1-20 remain pending, and are rejected under 35 USC 103(a) as allegedly being unpatentable over Morioka et al., (US Patent 6,611,728) "Morioka" in view of Gillenwater et al. (US Patent 6,557,115) "Gillenwater," and further in view of Lindberg et al., (US Patent 5,663,967). Applicant traverses these rejections for the reasons stated below. Applicant does not acquiesce in the correctness of the rejections and reserves the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicant reserves the right to pursue the full scope of the subject matter of the claims in a subsequent patent application that claims priority to the instant application.

Applicant respectfully submits that all claims are allowable over the cited art. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP 706.02(j).

The Office Action states that Morioka teaches "a fault isolation system that compares an inputted set of suspected faulty device features with the previously studied features listed in the defect table in order to identify causes of the failure." Applicant submits that this is not accurate. Nowhere does Morioka teach or suggest (1) the concept of *inputting suspected faulty device features* and (2) the concept of *comparing* suspected faulty device features with the previously studied features to identify a failure. Instead, Morioka teaches gathering **actual detected defects** as opposed to suspected defects. See e.g., Figure 1 and column 8, lines 18-30. Wafers are

inspected for defects, e.g., using particle inspection 102 to create coordinate data 105, image inspection 103 to create defect image data 106, and electrical testing 104 (in which a pass/fail is determined) to create probe data 107. Data 105, 106 and 107 are not "compared" with the inspection history list 109, but are instead used to "create the inspection history list 109." (See column 8, lines 34-36.) Similarly, defect location history list 111 is not used as a comparison with inputted defect data, but is instead is a collection of inspection data for each of a plurality of wafers being tested. Ultimately, the defect location list 111 is analyzed to understand "how much defects caused by each process affect the yield." (See, e.g., column 17, line 38.) Defect location list's 111 purpose is not for comparison with inputted defect data, as is claimed in the present invention.

The Office Action further states that Gillenwater teaches re-using defect information to diagnose a failure. As noted in Applicant's previous response, Gillenwater teaches a system for rearranging testing sequences based on prior real (not simulated) testing results, i.e., what is the most effective order for running a set of tests. Like Morioka, Gillenwater fails to teach a process for *comparing* an inputted set of suspected faulty device features with the previously studied features. Gillenwater merely provides an optimized test sequence based on information in a database. Other than the fact that Gillenwater addresses issues related to a testing environment, Gillenwater is wholly unrelated to the present invention. One skilled in art could not arrive at the features of Applicant's invention by combining Morioka and Gillenwater.

The Office Action further states that Lindberg teaches using a simulation program to simulate the operation of a device. The simulation used in Lindberg is with reference to mapping failing scan test vectors into simulation scan patterns that are then fed into a fault simulator. Ultimately, however, the simulation is used to identify potential faults that are then

physically probed (see, e.g., Figure 2). Nowhere does Lindberg teach or suggest comparing the output of the simulation with previously studied features. Moreover, there would be no such motivation to combine the references to arrive at the present invention since the simulation in Lindberg is utilized to identify locations to physically probe, and the present invention seeks to avoid costly probing operations.

For these reasons, Applicant submits that claim 1 (and similarly claims 9, 15 and 18) are not obvious in view of the three cited references. Each of the claims not specifically addressed herein is believed allowable for the reasons stated above, as well as their own unique features.

Applicant respectfully submits that the application is in condition for allowance. If the Examiner believes that anything further is necessary to place the application in condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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